

## REMARKS

In an Office Action mailed February 10, 2006, the Examiner objected to the Specification and objected to Claims 1, 8, 13, 16 and 24. The Examiner rejected Claims 10-11, 17-18, 23 and 25 under 35 U.S.C. § 112, second paragraph for alleged indefiniteness. Claims 1-4, 6-12, 14-19, 21-22, 24 and 26 were rejected under 35 U.S.C. § 112, first paragraph for allegedly containing new matter, for allegedly failing to meet the written description requirement, and for allegedly failing to meet the enablement requirement.

The Applicants respond to each of the Examiner's objections and rejections below. In view of the amendments noted above and the arguments presented herein, the Applicants respectfully request reconsideration of the merits of this application.

### Objections to the Specification

The Examiner alleged that paragraphs [0074] and [0077] do not comply with the requirements set forth in 37 C.F.R. §§ 1.821-1.825. The Applicants amend both paragraphs to reference sequence identifiers associated with the nucleotide sequences recited therein.

A Sequence Listing submitted on paper and in electronic form with this Response supplements the originally filed Sequence Listing. In accord with the requirement set forth in 37 C.F.R. § 1.821(f), the undersigned, an attorney registered to practice before the U.S. Patent and Trademark Office (USPTO) and representing the Applicants in the above-identified patent application does hereby state and affirm that the content of the enclosed diskette and the content of the enclosed paper copy of the Sequence Listing are the same. The submitted Sequence Listing introduces no new matter. Therefore, the Applicants believe that the application is in compliance with the requirements set forth in 37 C.F.R. §§ 1.821-1.825 and respectfully request reconsideration of the objection as applied to the above-identified application.

### Objections to the Claims

The Examiner alleged that Claims 1, 8 and 16 are drawn to a non-elected species (i.e. antisense). The Applicants amend Claims 1, 8 and 16 to remove references to antisense.

Next, the Examiner alleged that Claim 13 lacks an "is" between the word "sequence" and "SEQ ID NO:2." The Applicants amend Claim 13 to correct this omission.

Finally, the Examiner alleged that Claim 24 contains a misspelling. The Applicants amend Claim 24 so that "thalian" is now "thaliana." Accordingly, the Applicants respectfully request reconsideration of these objections as applied to the Claims 1, 8, 13, 16 and 24.

Rejections Under 35 U.S.C. § 112, second paragraph

The Examiner alleged that the phrase, "the transgenic plant," in Claims 10-11 and 17-18 lacks antecedent basis. The rejection, however, is moot because Claims 10-11 and 17-18 have been cancelled.

Next, the Examiner alleged that phrase, "the sequence," in Claim 23 lacks antecedent basis. The Applicants amend Claim 23 to recite that "the sequence" is now "the polynucleotide sequence," as recited in Claim 22.

Finally, the Examiner alleged that the phrase, "the DNA sequence," in Claim 25 lacks antecedent basis. The Applicants amend Claim 25 to recite that "the sequence" is now "the DNA sequence," as recited in Claim 24. Thus, the Applicants respectfully request reconsideration of these rejections as applied to Claims 10-11, 17-18, 23 and 25.

Rejections Under 35 U.S.C. § 112, first paragraph

The Examiner alleged that the phrase, "the FPA polynucleotide having a coding region which has at least 50% (or 80%) sequence identity to SEQ ID NO:2," in Claims 1-4, 6-12, 14-19, 21-22 and 26 contain new subject matter. The Applicants, however, respectfully disagree. The Applicants note that support for this phrase is at paragraphs [0028] to [0032] of the above-identified application. Specific reference to homology among polynucleotides is made in paragraph [0030].

Likewise, the Examiner alleged that the phrase, "the protein having at least 80% sequence identity to SEQ ID NO:3," in Claim 24 contains new subject matter. Again, the Applicants note that support for this phrase is at paragraphs [0028] to [0032] of the above-identified application. Specific reference to homology among proteins is made in paragraph [0031].

Next, the Examiner alleged that the above-identified application fails to contain an adequate written description of other FPA genes. The Applicants note, however, that six *fpa* mutants are described in the above-identified application in paragraphs [0069] to [0072]. These paragraphs, in effect, predict that other FPA genes that are sufficiently similar in sequence identity to the exemplified sequences in the above-identified application will be effective in both *Arabidopsis* and other plants for the same effect. The scientific literature supports the prediction of the Applicants. Since the publication of this work by the Applicants here, *fpa* genes have been identified in peas (*Pisum sativum*), Medicago (*Medicago truncatula*) and Lotus (*Lotus japonicus*), as well as Poplars (*Populus*

*trichocarpa*). See Hecht V, et al., "Conservation of Arabidopsis flowering genes in model legumes," Plant Physiol. 137:1420-1434 (2005) (Table II); and Brunner A & Nilsson O, "Revisiting tree maturation and floral initiation in the poplar functional genomics era," New Physiologist 164:43-51 (2004) (Table 1). Note that in Table II of the Hecht paper, not only are other homologs of FPA in other plants found, but the analysis of the amino acid sequence of the pea homolog reveals a 72% sequence identity at the amino acid level to the sequence set forth by the applicants here. This is evidence that the hypothesis set forth by the applicants here, that proteins above a level of 70% sequence identity would function as the *Arabidopsis* protein exemplified here, is correct.

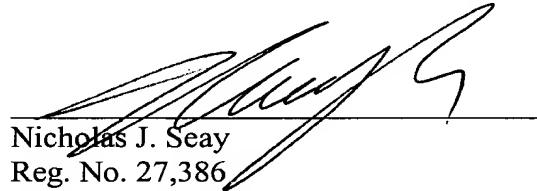
Note that all the broader independent claims presented herein impose two requirements on any transgenic gene to come within the scope of these claims. First, the transgene or genetic construct must express a protein more than 70% identical in amino acid sequence to a protein produced by SEQ ID NO:2. Second, the transgene must be effective in a transgenic plant to produce earlier flowering compared to non-transgenic plants of the same species. It is submitted that this combination of requirements is supported by the specification, supported by the science and commensurate with what the Applicants have enabled here. Therefore, the Applicants respectfully request reconsideration of these rejections as applied to Claims 1-4, 6-12, 14-19, 21-22, 24 and 26.

The Examiner indicated that claim drawn to the exemplified *Arabidopsis* sequences were allowable. Claims 5, 13 and 23 now all are independent and limited to the exemplified sequences. As such, it is believed that these claims ought to be in condition for allowance regardless of the examination of the other claims.

Fees

No fee is believed due in connection with this submission. However, if a fee is due, in this or any subsequent response, please charge the fee to Deposit Account No. 17-0055. Likewise, no extension of time is believed due, but should any extension be required in this or any subsequent response, please consider this to be a petition for the appropriate extension of time and a request to charge the petition fee due to the same Deposit Account.

Respectfully submitted,



Nicholas J. Seay  
Reg. No. 27,386  
Attorney for Applicants  
QUARLES & BRADY LLP  
P.O. Box 2113  
Madison, WI 53701-2113

TEL (608) 251-5000  
FAX (608) 251-9166